Order Hypostomides

Body covered with bony plates, firmly joined on trunk, movable on tail. Snout extended forward above mouth, not tubular. Mouth inferior, toothless. Gill openings narrow. Gill cover formed by large plate corresponding to opercle, preopercle and subopercle. No pseudobranchiae. Gills 4, lamellated. Lower pharyngeals separate. Branchiostegal one, rudimentary. No air bladder. Dorsal and anal short, of soft rays only. Pectoral large, of elongate rays, sometimes spinous. Ventrals abdominal, with spine and 1 to 3 rays.

One family, fantastic little fishes of the Asiatic Seas.

Family Pegasidae

Body broad, greatly depressed. Tail with 4 angles. Snout prolonged. Mouth small, edge formed by premaxillaries. 20 teeth. Suborbital ring well developed, forms suture with gill cover. Intestinal canal short. Vertebrae few, no ribs. Dorsal short, opposite similar anal. Caudal small. Pectoral broad, very large, horizontal. Ventral well behind pectoral, not far from vent, of 1 or 2 rays, one very long.

~~Synopsis~~ Analysis of Genera

a.' Tail short, of only 8 rings and not long as rest of body. Pegasus.

a.² Tail longer, of 11 to 15 rings and longer than rest of body.
Parapegasus.

Scales 55 in lateral line (44 on figure to caudal base; 4 above, 12 below, predorsal extends forward opposite hind preopercle edge; no postocular scales).

D. X, 9, fourth spine 3 in head, sixth ray 3; A. III, 8 (III, 7 on figure), third spine 3 4/5, second ray 3 1/3; caudal 1 1/3, forked, lobes pointed; least depth of caudal peduncle 3 1/3; pectoral 1 1/4; ventral 1 4/5.

Body olive, ornamented with longitudinal blackish lines which more distinct above lateral line. Six transverse blackish bands extend from back to level of lateral line. Black blotch opposite last anal rays. Fins of uniform color. Length 220 mm.

According to Valenciennes the type was 200 mm. long. Face reddish. Back

Genus Pegasus Linnaeus

Pegasus Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 338, 1758. (Type Pegasus volitans Linnaeus, monotypic.

Zalises Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 24, p. 2, 1901. (Type Zalises umitengu Jordan and Snyder = Pegasus draconis Linnaeus, monotypic.)

Spinipegasus Rendahl, Arkiv för Zool. Kon. Svensk. Vet., vol. 21A, No. 27, p. 56, 1930 (type Pegasus laniarius Cuvier, orthotypic.)

Trunk short, broad, greatly depressed. Tail short, not elongate or compressed, with only 8 rings. Snout more or less extended. Mouth inferior. Suborbital well developed, forms suture with gill cover. Intestinal tract rather short, with 1 or 2 complete circumvolutions. Vertebrae not numerous, thin. No ribs. Pectoral rays all simple, slender, not spine like. Ventral with 1 or 2 rays, outer long.

Madagascar, East Indies, Philippines.
Bleeker also includes Lethrinus
microdon Valenciennes, though it
appears to differ according to the
redescription and figure of the type
by Kamrage. I have followed Bleeker
in including Lethrinus semicinctus,
even though it suggests Lethrinus
amboinensis. The following is from
the account and figure by Savage
of Lethrinus semicinctus:

Depth 3 1/4; head 2 3/5, upper profile
slightly curved with eye impinging
little on upper profile. Snout 1 4/5 in
head from snout tip; eye 3 7/8, 2 1/5 in
snout, 1 3/5 in suborbital depth to
maxillary expansion; maxillary reaches
half way to eye, length 2 4/5 in head;
all teeth conic; interorbital wider
than eye.

Analysis of Species

a. Tail with 8 rings. draconis.

a.² Tail with 11 rings. latemarius.

1647

Pegasus draconis Linnaeus

Pegasus draconis Linnaeus, Syst. Nat., ed. 12, pt. 1, p. 418, 1766 (type locality, India).

leave broad darks band from eye to caudal base medially. Head variably dark brown above, paler beneath; dark band extends from mandible tip to eye, another below eye down over cheek and still a third down over vertical preopercle flange; often pale interspaces on cheek with various dark blotches or clouding. Iris pale yellowish or whitish. Fins all pale. Dorsal spines and rays with dark brown spots and on spinous fin membranes with variable dark bands, sometimes broken as blotches or bars. Caudal with 5 dark transverse bands. Anals like dorsals. Pectoral pale, dark blotch below middle of base. Ventral pale, with 4 transverse dark bars.

Red Sea, Zanzibar, Inozambique,

— Bleeker, Verh. Batavia. Genoots. (Trosk.), vol. 25, p. 27, 1853 (Amboina, Banda, Ceram), p. 28 (Padang); Nat. Tijds. Ned. Indië, vol. 5, p. 234, 1853 (Ceram), p. 319 (Amboina); vol. 6, p. 90, 1854 (Banda, Neira), p. 314 (Larantuka, Flores); vol. 7, p. 362, 1854 (Batjan); Act. Soc. Sci. Ind. Néerl., vol. 1, no. 5, p. 8, 1856 (Amboina); vol. 2, no. 7, p. 9, 1857 (Amboina); Ned. Tijds. Dierk., vol. 4, p. 125, 1873 (1874) (reference). — Peters, Monatsb. Akad. Wiss. Berlin, p. 839, 1876 (1877) (New Britain). — Günther, Journ. Mus. Godeffroy, vol. 9, pt. 17, p. 428, 1910 (New Pommerania). — Ogilby, Mem. Queensland Mus., vol. 1, p. 36, december 27, 1912 ("Coast of Queensland"). — Weber, Siboga Exped., vol. 57, Fische, p. 121, 1913 (Sula).

least depth of caudal peduncle 3 4/5 to 4;
pectoral 1 3/5 to 1 7/8; ventral 1 7/8 to 2.

Back and upper half of head brown, below pale to whitish. Coloration of alcoholic examples often greatly variable; due to preservation. Usually at least 8 to 10 dark brown blotches along back, these variously continuous on side below, at least on caudal peduncle though on body anteriorly broken to form 4 or 5 alternating large dark blotches smaller than eye, medially or at least below lateral line, of which first conspicuous as deeper in color or more pronounced; along lower side of trunk and tail bands may again alternate as dark blotches, though paler and less defined. In some partially bleached examples dark lateral blotches fade and

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 207, 1925 (Durban beach); Mem. Bishop Mus., vol. 10, p. 116, 1928 (compiled). ✓ — Chw, Biol.

— Rendahl, Arkiv för Zool. Kon. Svenska Vet., vol. 21 A, No. 27, p. 21, 1930 (North Ubian, Sulu; Tapeh Strait).

— Notes Isle Réunion, vol. 2, p. 30, 1862.

— Duméril, Hist. Nat. Poiss., vol. 2, p. 490, 1870 (China).

Galeus draconis Veale and Bean, Proc. U. S. Nat. Mus., vol. 33, p. 240, 1907 (Zamboanga). — Franz, Abhandl. Kön. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 21, 1910 (Tagami Bay, Iraga Canal).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 207, 1925 (Durban beach); Mem. Bishop Mus., vol. 10, p. 116, 1928 (compiled). — Chu, Biol. Bull. St. John's Univ., No. 1, p. 99, January 1931 (reference). — Fowler, Ann. Natal Mus., vol. 7, pt. 3, p. 412, text fig. 6, 1934 (Durban).

Pegasus draco ~~Lamarck~~ Guichenot, Notes Ile Réunion, vol. 2, p. 30, 1862.

— Lamériel, Hist. Nat. Poiss., vol. 2, p. 490, 1870 (China).

Zaleses draconis Veale and Bean, Proc. U. S. Nat. Mus., vol. 33, p. 240, 1907 (Zamboanga). — Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 21, 1910 (Vagami Bay, Iraga Canal).

March 25, 1909. Length 320 mm.
1 example. Mactan Island. August 28, 1909. Length 39 mm.
8061. Mompog Island, vicinity
Marinduque. March 3, 1909. Length 283 mm

p. 116, 19
Bull. U
1931 (re
Mus., vol.
Pegasus

front of each jaw; rather broad inner band of villiform teeth above and anteriorly below; interorbital 3 2/3 to 4 2/5, nearly level or only very slightly convex. Gill rakers 5 + 7, low knobs, 2 1/3 in gill filaments, which 2 1/4 in eye.

Scales 43 to 46 in lateral line to caudal base and 3 or 4 more on latter; 5 above, 13 or 14 below, 8 or 9 predorsal forward opposite vertical preopercle edge. Caudal covered with rather large scales basally. Scales with 12 or 13 basal radiating striae, 30 to 77 minute, short apical denticles, with 3 to 5 transverse series of basal elements; circuli fine.

D. X, 9, I, third spine 2 2/3 to 2 4/5 in head, first ray 2 2/5 to 3; A. III, 8, I, third spine 3 1/2 to 4 1/3, first ray 2 4/5 to 3; caudal 1 2/5 to 1 2/3, deeply emarginate;

Pegasus lativostris Richardson, Ichth. China Japan, p. 203, 1846 (type locality, Sea of China).

(Parapegasus natans (not Linnaeus) Kaup, Cat. Lophobr. Fish Brit. Mus., pl. 1, fig. 3 (ventral view), 1856.

Cataphractus draco Gray, Cat. Fish Gronow, p. 144, 1854 (type locality, "mari Indico"; on Linnaeus).

Montalban, Philippine Journ. Sci., vol. 33, no. 4, Aug. 1927, p. 409, pl. 3, fig. (Calauan, Camigao Island, Banaal Island). 1/m Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 213 (compiled).

Lethrinus latifrons Rüppell, Neue Wirbelth., Fische, 1835, p. 118, pl. 28, fig. 1 Mohila, Red Sea. 1/m Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 458.

A Lethrinus semicinctus Valenciennes, Hist. Nat. Poiss., vol. 6, 1830, p. 294. Bourou. 1/om Savage, Hist. Nat. Madagascar, Poiss., 1891, p. 202, pl. 19, fig. 3a–b (type).

Depth 3 2/5 to 3 3/4; head 2 2/3 to 2 3/4, width 2 1/8 to 2 1/3. Snout 2 1/3 to 2 3/5 in head; eye 3 1/8 to 3 4/5, 1 1/5 to 1 3/4 in snout, greater than interorbital in young to subequal with age; maxillary reaches eye, length 2 1/2 to 3 1/10 in head; teeth uniserial, conic, 4 as canines in

1651

Zalesis inmitenga Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 2,
pls. 1-2, 1902 (type locality,
Wakanoura, Kii, Japan; Boshu
near Misaki).

~~Pegasus papilio Gilbert~~

Pegasus papilio Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 614, fig. 239, 1903 (1905) (type locality, Bird Island, off north east coast of Hawaii; 24 to 83 fathoms). — Fowler, Mem. Bishop Mus., vol. 10, p. 116, 1928 (Kakaako, Oahu).

Anthias nobilis Franz., Abhandl. Bayer. Akad. Wiss., vol. 4, pt. 1, 1910, p. 38, pl. 4, fig. 44. Misaki.

Franzia nobilis Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, 1914, p. 251, pl. 29, fig. 2 (Misaki). — Tanaka, Fig. descript. Fishes of Japan, vol. 31, 1921, p. 567, pl. 143, fig. 397 (Tokyo market).

Franzia ardens Jordan and Thompson, Mem. Carnegie Mus., vol. 6, no. 4, 1914, p. 251, pl. 30, fig. 1. Misaki.

Franzia affinis Tanaka, Dobutsugaku Zasshi (Zool. Magazine), vol. 27, no. 325, Nov. 15, 1915, p. 566. Nagasaki. — Fig. descript. Fishes of Japan, vol. 31, 1921, p. 572, pl. 144, fig. 400 (Nagasaki).

U. S. N. M., No. 51549. Near Bird Island, Hawaii, in 33 to 71 fathoms. Albatross Collection (No. 4149).

Length 47 mm. Type of Pegasus papilio. Dark spots in band on each pectoral still distinct as in Gilbert's figure.

U. S. N. M., No. 51665. Off north east coast of Hawaii, in 24 to 83 fathoms. Albatross Collection (No. 4061). Length 46 mm. Paratype of Pegasus papilio. Dark bar on each pectoral faint.

Depth 5; head 2 3/4, width 1 1/3. Snout 2 in head, spatulate, each lateral edge minutely denticulate and 2 close set median ridges; eye 4 1/3; interorbital 2 1/5, concave.

Trunk above of 3 rings, first with pair of deep median concavities and each of others with single square concavity; tail with 7 rings behind vent.

D. 5, first ray 1 1/2 in head; A. 5, first ray 2; pectoral rays 11, length 2 1/8 in combined head and body; ventral 2 1/3; caudal 1 1/3 in head; vent nearly midway between hind eye edge and caudal base.

Brown, reticulated with darker. Snout and last half of tail blackish. Head and trunk below whitish. Iris silvery.

19 examples. Jabuda Bay, Palawan Island. December 31, 1908. Length 58 to 71 mm.

4 examples. Iligan, Mindanao. August 1, 1909. Length 58 to 62 mm.

1 example. Paluan River, Mindoro. December 11, 1908. Length 80 mm.

2 examples. Pandanon Island, between Cebu and Bohol. March 23, 1909. Length 25 to 53 mm.

19454 to 19455, 21623. Pasacao River, Ragay Gulf, Luzon. March 9, 1909. Length 70 to 82 mm. [275]

22 examples. Port San Vincente, northern Luzon. November 18, 1908. Length 46 to 58 mm.

1 example. Pucot River, Marinduque Island. January 29, 1909. Length 70 mm.

5 examples. Reef opposite Cebu. April 7, 1908. Length 22 to 64 mm.

fins pale, with some dusky dots on pectoral, caudal and dorsal.

Natal, India, East Indies, Philippines, China, Japan, Melanesia, Queensland, Hawaii.

Pegasus papilio Gilbert may be simply a variant as it seems to differ only in the presence of a dark transverse band on each pectoral.

10 examples. Jolo, shore seine. March 6, 1908. Length 21 to 31 mm.

4 examples. Mactan Reef, tidepool. August 31, 1909. Length 44 mm.

23164 and 23165. Malampaya River, Palawan Island. December 26, 1908. Length 73 to 87 mm. 13 examples.

125 examples. Malcochin Harbor, Linapacan Island, Linapacan Strait. December 19, 1908. Length 28 to 60 mm.

23713. Malinao River, Dumaran Island, vicinity eastern Palawan. April 7, 1909. Length 70 mm.

23750 and 23754. Mantaquin Bay, Palawan Island. April 2, 1909. Length 73 to 77 mm.

23371. Murcielagos Bay, brackish water, Mindanao. August 20, 1909. Length 67 mm.

9 examples. Nabatas Point, Samar Island. July 24, 1909. Length 26 to 63 mm.

D. 5653. Lamulu, S. 40° E., 18 miles (lat. 4° 27' 36" S., long. 121° 16' 36" E.), Gulf of Boni. December 17, 1909. Length 15 mm.

D. 5165. Observation Island, N. 70° W., 6.40 miles (lat. 4° 58' 20" N., long. 119° 50' 30" E.), Sulu Archipelago, Tawi Tawi Group. February 24, 1908. Length 46 to 48 mm. Two examples. Tail rings 8, tail to caudal base 1 3/4 in rest of fish.

D. 5598. Zamboanga Light N. 31° W., 0.1 mile (lat. 6° 54' 00" N., long. 122° 04' 30" E.), Mindanao. October 12, 1909. Length 8 mm. Four examples.

A. N. S. P., one example - Durban beach, Natal. 1922. H. W. Bell Marley. Length 57 mm.

5 examples. Cammahala Bay, small stream, Ragay Gulf, Luzon. March 11, 1909. Length 59 to 76 mm. Male with buccal ova.

2 examples. Cammuyguan Point, east coast Mindanao. May 9, 1909. Length 59 to 60 mm.

24023 to 24026. Cebu docks. September 5, 1909. Length 69 to 74 mm.

1 example. Cebu market. August 28, 1909. Length 64 mm. [1823.]

1 example. Cebu market. September 3, 1909. Length 27 mm.

24075. Endeavor Strait, Malampaya Sound, Palawan Island. December 23, 1908. Length 63 mm.

6557. Head of Bakoli River, Ulugan Bay, Palawan. December 28, 1908. Length 65 mm.

Pegasus laternarius Cuvier

Pegasus laternarius Cuvier, Règne Animal, ed. 1, vol. 2, p. 332, 1817 (type locality, "Mer des Indes"); ed. 2, vol. 2, p. 364, 1829.

— Richardson, Ichth. China Japan, p. 202, 1846 (Sea of China). — Kaup, Cat. Lophobr. Fish Brit. Mus., p. 3, 1854 (Indian and China Seas).

— Duméril, Hist. Nat. Poiss., vol. 2, p. 491, pl. 26, figs. 1a–b, 1870 (China, Macao).

— Rendahl, Arkiv for Zool. Kon. Svenska. Vet., vol. 21A, No. 27, p. 27, 1 fig. 9–10 (center), 1930 (China)

4655

Pegasus draco (not Linnaeus) Kaup, Cat. Lophobranch. Fish Brit. Mus., pl. 1, fig. 4, 1854.

Pegasus volans (not Linnaeus) Günther, Cat. Fish. Brit. Mus., vol. 8, p. 148, 1870 (Chinese insect boxes).

Vent nearly midway between front eye edge and caudal base. Snout sometimes short, pointed, with or without minute spines, sometimes prolonged into 5 or 6 ridged extension, each ridge finely denticulated.

Tail of eleven rings. Back of trunk with 2 median ridges, each with 3 compressed, more or less trenchant longitudinal tubercles. No groove behind head. Second, third and fourth tail rings with spine directed backwards in middle of side.

D. 5; A. 5; ventral 2; pectoral 10.

Two broad brownish bands across tail, posterior at some space from tail root. Pectoral rays with brown spots. Length not given. (Günther.)

China.

Genus Parapegasus Duméril

Parapegasus Duméril, Hist. Nat. Poiss., vol. 2, p. 493, 1870. (Type Pegasus natans Linnaeus, designated by Jordan, Genera of Fishes, pt. 3, p. 357, 1919.)

Leptopegasus Bleeker, Ned. Tijds. Dierk., vol. 4, p. 125. (Type Pegasus natans Linnaeus, designated by Jordan, Genera of Fishes, pt. 3, p. 367, 1919.)

Acanthopegasus Mc Culloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 106, 1915. (Type Pegasus lancifer Kaup, monotypic.)

Body slender. Tail much longer than trunk, with 11 to 15 rings, depressed. Snout more or less elongate, edges denticulate, narrow. Vertebrae 19 to 21, of which 12 to 14 caudal.

Analyses of Species

a.¹ Tail of 12 rings. volitans.

a.² Tail of 14 or 15 rings. lanciferus.

136 c

6807. Kowloon market. September 19, 1909. Length 283 mm.

A 1570. Kan Wan Bay, Formosa. January 25, 1910. Length 245 mm.

A 1607, Naha, Okinawa, Riu Kiu. February 7, 1910. Length 560 mm.

20621. Length 62 mm.

30511 U.S.N.M. New Guinea. Australian Museum. Length 336 mm. Ex Lethrinus haematopterus

30604 U.S.N.M. New Guinea. Australian Museum. Length 178 mm.

1658

Parapegasus volitans (Linnaeus)

Pegasus volitans Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 338, 1758 (type locality, Amboina).

1659

~~Pegasus volitans~~ Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 138, July 7, 1925 (reference). — Whitley, Rec. Austral. Mus., vol. 21, No. 27, p. 9, 1930 fig. 1-2 (plates) (Makassar; Jello, Celebes).

— Rendahl, Arkiv för Zool. Kon. Svenska. Vet., vol. 21A, No. 27, p. 9, 1930 fig. 1-2 (plates) (Makassar; Jello, Celebes).

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Parapegasus volitans Fowler, Mem. Bishop Mus., vol. 10, p. 116, 1928 (compiled).

1659

~~Pegasus volitans~~ Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 138, July 7, 1925 (reference). — Whitley, Rec. Austral. Mus., vol. 15, No. 5, p. 295, April 6, 1927 (type of Pegasus pauciradiatus; Port Hacking; New South Wales; Wilanti, south Malaita, Solomons).

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Parapegasus volitans Fowler, Mem. Bishop Mus., vol. 10, p. 116, 1928 (compiled).

c.' Jaunt less than half of head or wing thrust -

d.' D. with submarginal black band t.r. 34

d^2 Smaller dark brown - t.r. 30-33

d^3 Yellowish color - t.r. 37

Capsule

Funeral

Mourning

(refere
Insect.,
1927 (
Port F
Wilant
→

longest and sometimes ends in filament, 2 1/2 in total length of head and body to caudal base, third spine 2 1/3 in total head length in young; first ray 1 1/3 in last ray which 1 1/2 in total head length, first ray subequal with last in young or 2 1/8 in total head length; D. III, 7, I, second spine 2 1/5, third to fifth ray often filamentous and fourth equals total head length; caudal ends in filamentous points, 1 3/4 in rest of fish, least depth of caudal peduncle 2 to 2 1/5 in total head length; pectoral 1; ventral 2 4/5 to 3 3/5 in combined head and body to caudal base.

In alcohol brown, paler to whitish below. Broad pale gray band, little less than eye in width extends from

1660

~~Pegasus volans Linnaeus~~

Pegasus volans Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 338, 1758 (type locality, Amboina) [according to Rendahl this reference does not apply]; ed. 12, pt. 1, p. 418, 1766.

— Bleeker, Nat. Tijds. Ned. Indië, vol. 3, p. (238) 307, 1852 (Wahai), p. 546 (Amboina); Ned. Tijds. Dierk., vol. 4, p. 125, 1873 (1874) (reference).

— Gunther, Cat. Fish. Brit. Mus., vol. 8, p. 148, 1870 (China). — Elera, Cat. Fauna Filipinas, vol. 1, p. 594, 1895 (Luzon; Manila). — Chu, Biol. Bull. St. John's Univ., no. 1, p. 99, January 1931 (reference).

eye to pectoral basally. Iris grayish. Fins all pale brown, some examples with soft dorsal becoming dusky brown at terminal hind joint. Ventral pale, with broad outer or anterior darker band.

Red Sea, Mozambique, Amboina, Philippines. Alcoholic specimens usually with the pale oblique band from the lower eye edge down and ant. on the pectoral base:

1661

Pegasus natans Linnaeus

Pegasus natans Linnaeus, Syst. Nat., ed. 12, pt. 1, p. 418, 1766 (type locality, India).

— Valenciennes, Règne Animal, Cuvier, Ed. Ill., pl. 3, fig. 2, 1839.

— Bleeker, Nat. Tijds. Ned. Indië, vol. 6, p. 458, 1854 (Amboina); vol. 12, p. 218, 1856 (Nias); Act. Soc. Sci. Ind. Néerl., vol. 3, no. 9, p. 3, 1857-58 (Padang); Nat. Tijds. Ned. Indië, vol. 20, p. 238, 1859-60 (Singapore).

30641 U.S.N.M. New Guinea.
Linnean Society of New South Wales.
Length 164 mm.

32725 U.S.N.M. Indian Archipelago.
Royal Museum of Leiden. Length 164 mm.

65902 U.S.N.M. Vavau, Tonga.
Bureau of Fisheries (No. 08895). Length 171 mm.
As Lethrinus mahsenoides.

75895 U.S.N.M. Borneo. H. C. Raven.
Length 181 mm.

27631 A.N.S.P. Padang, Sumatra.
Harrison and Hiller. Length 310 mm.
Color when fresh in arrack pale olivaceous brown, each scale on side with more or less pale spot and lower surface pale or whitish. Opercular flap buff color. Vertical fins olivaceous brown. Caudal little dusky marginally with several dusky wavy cross lines. Paired fins tinged dilute greenish yellow. Inside gill opening orange red. Iris yellowish.

— Günther, Cat. Fish. Brit. Mus., vol. 8, p. 148, 1870 (North China, China Seas, Torres Strait, Moreton Bay); Rep. Voy. Challenger, vol. 1, pt. 4, p. 42, 1880 (Somerset; Cape York). — Weber, Zool. Forsch. i Austral. Archipel., vol. 5, p. (108) 268, 1895 (New Guinea). — Elera, Cat. Fauna Filipina, vol. 1 p. 595, 1895 (Luzon, Isla to Cuyo, Cuyito, Samar). — Lenchen, Mitteil. Naturh. Mus. Hamburg, vol. 21, p. 190, 1903 (1904) (Singapore).

Leptopegasus natans Bleeker, Ned. Tijds. Dierk., vol. 4, p. 125, 1873 (1874) (reference).

18775. Tictauan Island. September 8, 1909. Length 151 mm.

6429. Tilig, Lubang. July 14, 1908. Length 230 mm.

2 examples. Varadero Bay, Mindoro. July 23, 1908. Length 42 to 86 mm.

5939. Zamboanga market. May 26, 1908. Length 345 mm.

22382. Amboina market, Amboina, Dutch East Indies. December 7, 1909. Length 134 mm.

5042. Sandakan, Borneo. February 29, 1908. Length 270 mm.

11734, 19326, 19329, 19986, 20391. Vandakan Bay. March 2, 1908. Length 71 to 100 mm.

5118. Vandakan market. March 4, 1908. Length 177 mm.

A12711 to A12714, 19793. Gomamo Island. December 3, 1909. Length 131 to 365 mm.

Parapegasus natans Fowler, Journ. Acad. Sci. Philadelphia, ser. 2, vol. 12, p. , pl. (upper left figure), 1904 (Padang). — Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 10, 1906 (1907) (Cavite). — Mc Culloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 110, fig. 2, 1915 (off Cape Capricorn; Double Island Point). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 441, 1921 (Padang material). — Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, p. 10, 1922 (Takao, Formosa). — Mc Culloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 138, July 7, 1925 (reference). — Mc Culloch, Rec. Austral. Mus., vol. 15, no. 1, p. 28, April 15, 1926 (Swan River; Gulf of Carpentaria; Bowan; Tuggerah Lakes; Malay

290, 289, 15309. Busin Harbor, Burias Island. March 8, 1909. Length 104 to 112 mm.

6066. Cagayan Island, Cagayanes Islands, Jolo Sea. March 31, 1909. Length 92 to 102 mm. (10 examples.)

15043. Calangaman Island, between Leyte and Cebu. March 16, 1909. Length 94 mm.

22152 and 22153. Cannahala Bay, Ragay Gulf, Luzon. March 11, 1909. Length 71 to 73 mm.

1 example. Caracaran, Batan Island, east coast Luzon. June 8, 1909. Length 89 mm.

21 examples. Galera Bay, Mindoro. June 9, 1908. Length 68 to 97 mm.

9918, 22935, 22936. Inamucan Bay, Mindanao. August. 9, 1909. Length 78 to 103 mm.

7 examples. Ligpo Point, Balayan Island, Luzon. January 18, 1908. Length 62 to 90 mm.

Archipelago). — Fowler, Mem. Bishop Mus., vol. 10, p. 116, pl. 8 B, 1928 (Padang material). — Chu, Biol. Bull. St. John's Univ., no. 1, p. 99, January 1931 (reference).

? Pegasus pristis Bleeker, Nat. Tijds. Ned. Indië, vol. 3, p. 606, 1852 (type locality, Padang).

Possibly Anthias (Pseudanthias) gibbosus may be a young stage, as suggested by Boulenger, for it is described from an example but 74 mm. long. Klunzinger gives the color as reddish, with nearly horizontal or little inclined clear streaks from the hind lower eye edge to the middle of the pectoral base. He also mentions that one example has a clear yellowish band from the opercular spine sloping behind to the caudal fin. The Japanese nominal forms described by Temm. & Schl., Jordan, Thompson and Tanaka, all seem to us to be variants of the present species.

1665

Cataphractus anceps Gray, Cat. Fish Gronow, p. 144, 1854 (type locality, "mari Indico"; on Linnaeus).

Pegasus pauciradiatus Ogilby, Cat. Fish. New South Wales, -append. A., p. 34, 1886 (1887) (type locality, Port Jackson).

Pegasus draconis (not Linnaeus) Ogilby, Mem. Queensland Mus., vol. 1, p. , 1912 (Queensland coast).

1666

depth $9\frac{4}{5}$ to $12\frac{1}{4}$; head $3\frac{1}{5}$ to $3\frac{3}{5}$ width 2 to $2\frac{1}{5}$. Snout $1\frac{2}{5}$ to $1\frac{3}{4}$ in head; eye $5\frac{3}{4}$ to $7\frac{1}{5}$, 4 to $4\frac{3}{4}$ in snout, subequal with interorbital; preoral length of snout $1\frac{4}{5}$ to 2 in head; interorbital flattened concavely.

Tail of 12 rings, tapering, well flattened behind. Trunks with 3 series of large shields, with 2 median parallel ridges above and stronger lateral ~~shield~~ keel each side, also lower lateral keel less distinct. Shields all minutely and uniformly granular.

D. 5, second ray $2\frac{1}{4}$ to $2\frac{1}{2}$ in head; A. $\frac{3}{5}$, second ray $2\frac{3}{5}$ to $2\frac{7}{8}$ in head; caudal $2\frac{1}{2}$ to $2\frac{2}{3}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{4}$, rays 10; ventral rays 3, fin 2 to $2\frac{1}{8}$ in head.

Brown above, speckled and spotted with darker. Blackish

blotch in ~~interorbital~~ occipital depression, and 1 laterally each side at upper junctures of third and fourth lateral shields. Tail with 3 dark transverse bands above. Entire under surfaces whitish. Iris gray. Dorsal and pectoral pale, spotted with brown, near middle of first membrane of latter fin usually small black spot. Caudal pale, brownish basally and some brown spots on rays terminally. Anal and ventral whitish.

India, Singapore, East Indies, Philippines, China, Formosa, Queensland, New South Wales.

16666

One example. Jolo. September 16, 1909. Length 59 mm.

Two example. Manila Harbor. March 16, 1908. Length 63 to 87 mm.

4517. Manila Bay. December 7, 1908. Length 48 to 53 mm. Two examples.

One example. Manila Bay. December 12, 1909. Length 43 mm.

Six examples. Manila Harbor. December 30, 1908. Length 49 to 74 mm.

One example. Manila Harbor. December 31, 1908. Length 66 mm.

One examples. Ragay Bay, Ragay Gulf, Luzon. March 10, 1902. Length 70 mm.

One example. Taal Beach, Balayan Bay. January 19, 1908. Length 80 mm.

marked resemblance to Amia hyalosoma. Both appear to be common to brackish water, in the mouths of rivers, estuaries, etc. The black lateral band of Amia lateralis is replaced in A. hyalosoma by a more or less indistinct silvery one and the caudal spot of the latter is larger and the fish is more angular.

23203, 23204, 24084. Alimango River, Burias Island. March 5, 1909. Length 50 to 60 mm. 7 examples.

28 examples. Bataan Island. July 22, 1909. Length 30 to 57 mm.

1 example. Bato River, Lagonoy Gulf, Luzon. June 17, 1909. Length 54 mm.

10 examples. Cabugo Bay, Catanduanes Island, east coast Luzon. June 7, 1909. Length 26 to 46 mm.

19376. Caiholo River, Ulugan Bay, Palawan. December 29, 1908. Length 29 to 43 mm.

4 examples.

19639. Bulan Island, south of Zamboanga. September 13, 1909. Length 54 mm.

1666c

Parapegasus lancifer (Kaup)

Archiv Naturges., vol. 27,

Pegasus lancifer Kaup, ~~Cat. Lophob.~~

~~Fish Brit. Mus., p. 111, 1858~~ (type

locality, "Java"). — Günther, Cat. Fish. Brit.

Mus., vol. 8, p. 149, 1870 (Tasmania).

— Castelnau, Proc. Zool. Acclimatiz.

Soc. Victoria, vol. 2, p. 57, 1873

(Hobson's Bay). —? Elera, Cat. Fauna

Filipinas, vol. 1, p. 596, 1895 (Luzon,

Santa Cruz, Cavite). — Rendahl,

Arkiv för Zool. Kon. Svenska. Vet.,

vol. 21A, No. 27, p. 34, figs. 12–13

(plates) 1930 (Hobart, Tasmania).

Acanthopegasus lancifer McCulloch,

Fish. Biol. Res., Endeavour, vol. 3, pt. 3, p.

106, fig., 1915 (entrance to Oyster

Bay, Tasmania).

Case 129

Lethrinus variegatus Valenciennes

Lethrinus variegatus Valenciennes, Hist. Nat. Poiss., vol. 6, 1830, p. 287. Massauah, Suez. 1/m Playfair, Fishes of Zanzibar, 1866, p. . 1/m Klunzinger, Verhandl. zool. botan. Gesellsch. Wien, vol. 20, 1870, p. 751 (Red Sea). 1/m Bleeker, Atlas Ichth. Ind. Néerland., 1/m Peters, Archiv Naturgesch., 1855, pt. 1, p. 243 (Mozambique).

vol. 8, 1876–77, p. 417, pl. (50) 328, fig. 3, pl. (52) 330, fig. 2 (Celebes, Flores, Timor, Halmahera, Ternate, Buru, Ceram, Amboina, Goram, Banda). 1/m Kossman and Räuber, Zool. Ergebn. Kais. Acad. Wiss. Berlin, vol. 1, 1877, p. 11 (Red Sea). 1/m Macleay, Proc. Linn. Soc. New South Wales, vol. 7, 1882, p. 247 (New Guinea). — Klunzinger, Fische Roth. Meer., vol. 1, 1884, p. 38. 1/m Savage, Hist. Nat. Madagascar, Poiss., 1891, p. 200, pl. 21, fig. 2a–b, pl. 25, fig. 4 (Massaua). 1/m Herre and

1666a

Pegasus natans (not Linnaeus)

Kaup, Cat. Lophobr. Fish Brit. Mus., p. 4, pl. 3, fig. 2, 1856 (description and figure of type).

Trunk broad, exceedingly depressed, nearly flat above, with narrow vertical sides. Snout prolonged, very thin, 4 sided extension, twice long as orbit; ridges beset with minute spines. Tail (without caudal) much longer than body to end of snout,

Rings 14 or 15, of which 6 posterior more or less confluent, much depressed, tape like. Dorsal ridges linear. From center of each sheild radiate raised lines, forming star-like figures.

D. 5; A. 5; V. 2; P. 15, rays equally slender.

Upper parts nearly uniform brown.
Length 100 mm. (Günther.)

Tasmania. Though originally credited to Java no subsequent records have ever been given and like Elera's Philippine record these localities are therefore probably erroneous.